

REMARKS

Claims 1-14 are all the claims pending in the application. Claims 1-2, 4-5, 7-9, and 11-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nakamura et al. (U.S. Patent No. 5,321,478). Claims 3, 6, 10, and 13 are objected to.

In the March 5, 2004 Response, Applicants requested the Examiner to provide more detail as to the predetermined time “period” of Nakamura et al., and how it relates to the recited one on/off cycle of the present invention. Applicants submitted that the Nakamura et al. “period” expresses an amount of time from a completion of a warm-up operation or a previous completion of a printing mode to the next printing mode. On the other hand, in the present invention, as recited in the claims, the period “expresses an amount of time required for one on/off cycle.”

In response to this request, the Examiner disagreed that the period shown in Nakamura et al. is a duration of time from a completion of a warm-up operation or a previous completion of a printing mode to the next printing mode, rather than the period of on/off control as recited in the claims of the present application. The Examiner cited column 1, lines 31-56 where Nakamura et al discloses:

“The heating operation for the heater is controlled by a temperature control unit. Control temperatures corresponding to respective modes, i.e., a warm-up mode, a standby mode and a copying mode (or an image forming mode), are set in the temperature control unit ... The temperature control unit performs on-off control of current supply to the heater so that the surface temperature of the fixing roller equals the control temperature while comparing the surface temperature of the fixing roller detected by a temperature-detector with the

control temperature ... Hence, when the accumulated standby time period is long, that is, when the frequency of image forming operations is small, electric power used for maintaining the surface temperature of the fixing roller at the standby temperature increases, causing an increase in economic burden on the user" (emphasis added by the Examiner).

The Examiner argued that when this disclosure is combined with disclosure in the Abstract, it is clear that on/off control of the heating unit, time period in accordance with frequency of image-forming operations, and different control modes are inexplicably linked.

The Abstract section cited by the Examiner is as follows:

"The apparatus further includes an electric-power reduction unit for reducing or cutting electric power supplied to the heater when an image forming signal is not input for a predetermined time period ... The electric power reduction unit sets the predetermined time period variably in accordance with frequency of image forming operations..."

Applicants thank the Examiner for his detailed comments. To more clearly define the differences between the present invention and Nakamura et al., Applicants have amended claims 1, 12, and 14 to more clearly define the period of the on/off control signal of the present invention. Applicants submit that this amendment should help clarify the difference between the period of the on/off control signal, and the time duration of the control mode.

Further, Applicants submit that the present invention claims a "*signal* having a period." This period is explained in the present specification in exemplary embodiments, for example, as T1 of one second, T2 of two seconds, and T3 of four seconds. Thus a *signal* having a period of one second, two seconds, or four seconds is supplied to the heater driver 106 (see page 9 of the present specification) depending on the control mode. One advantage of extending the period of the signal is that flicker can be reduced (see page 3 of the present specification). The Examiner

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/899,530

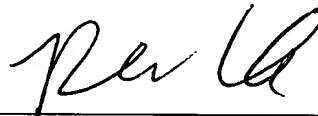
Attorney Docket No. Q64665

will note that a time of mere seconds of one of these claimed periods is quite different than the longer duration of a printing or stand-by mode. Thus, the "period" as recited in the present invention is different than that cited by the Examiner as being disclosed in Nakamura et al.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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